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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/630,586	07/30/2003	Nobuaki Nagao	62478-6017	1625

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EXAMINER

CHANG, KENT WU

ART UNIT	PAPER NUMBER
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2629

MAIL DATE	DELIVERY MODE
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01/10/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/630,586	Applicant(s) NAGAO ET AL.	
	Examiner Kent Chang	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on the RCE filed 10/19/07.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 51-99 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 51-99 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>10/16/07; 10/29/07</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/19/07 has been entered.

Information Disclosure Statement

1. The references listed in the Information Disclosure Statement submitted 10/16/07 and 10/29/07 have been considered by the examiner (see attached PTO-1449).

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 88-99 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The recitation of "applying a set-up puke 03 one of each pair of display electrodes" (claim 88 line 7) renders the claims indefinite.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 51-99 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (see pages 1-5 and Figures 1-4), hereafter AAPA, in view of Yamamoto et al (US Patent No. 5,142,200), hereafter Yamamoto.

On pages 1-5, applicant admits that a conventional plasma display apparatus comprising: a plasma display panel (PDP) that includes a plurality of pairs of a first electrode and a second electrode; and a plurality of discharge cells, each discharge cell having one of the pairs of the first electrode and the second electrode; and a driving circuit operable to drive the plasma display panel by repeating a set-up period of applying a set-up pulse to the discharge cells, and a write period of applying a write pulse to selected discharge cells of the plurality of discharge cells based on image data input, wherein the driving circuit is operable to apply, during the set-up period, the set-up pulse having a rectangular shape (see the set-up pulse in Figure 4) via the first electrodes, and wherein the driving circuit is operable to apply, during the write period, the write pulse to the selected discharge cells via the first electrodes, and a discharge sustain step for applying at least one sustain pulse across the pairs of display electrodes after the write step to perform a sustain discharge in discharge cells related to the written image. The conventional plasma display does not show that the set-up pulse having a waveform that rises at an average voltage change rate of no greater than $6 \text{ V}/\mu\text{s}$ and that starts to fall at a rate greater than the average voltage change rate at a time of the rising.

However, in the same field of endeavor for driving a plasma display device using a pulse, Yamamoto teaches to change the driving pulse having a rectangular shape in the conventional method to a waveform that rises at an average voltage change rate and that starts to fall at a rate greater than the average voltage change rate at a time of the rising so as to increase the margin of the driving pulse in a large size display panel due to the increase of inductance in the electrodes and interelectrode capacitance (see column 1 lines 15-23).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the driving pulse having a rectangular shape in the conventional method to a waveform that rises at an average voltage change rate and that starts to fall at a rate greater than the average voltage change rate at a time of the rising as taught by Yamamoto so as to increase the margin of the driving pulse in a large size display panel due to the increase of inductance in the electrodes and interelectrode capacitance as suggested by Yamamoto. Obviously, this modification would have also applied to the set-up pulse, writing pulse, or sustain pulse so as to increase the margin of these pulses due to the increase of inductance in the electrodes and interelectrode capacitance caused by these pulses.

Furthermore, it would have been obvious to one having ordinary skill in the art at the time of the invention to use any average rate in any range, such as at an average rate of 1 V/ μ s to 2.1 V/ μ s, an average rate of 2.1-2.625 V/ μ s, an average rate of 2.625-3.5 V/ μ s, to drive the PDP so as to allow the selection of an appropriate margin of the driving pulse for a display panel with various size due to the amount of inductance in the electrodes and interelectrode capacitance.

Response to Arguments

The claims are similarly rejected as in the Office Action dated 1/24/07. Applicant filed a Response on 7/2/07, mainly arguing that Yamamoto does not teach a set-up step having a change rate below 6V/ μ s. However, it should be noted that it would have been obvious to one having ordinary skill in the art at the time of the invention to use any average rate in any range, such as at an average rate of 1

V/ μ s to 2.1 V/ μ s, an average rate of 2.1-2.625 V/ μ s, an average rate of 2.625-3.5 V/ μ s, or any value less than 6 V/ μ s to drive the PDP so as to allow the selection of a appropriate margin of the driving pulse for a display panel with various size due to the amount of inductance in the electrodes and interelectrode capacitance.

The remainder of the pertinent topics for argument are present in the appropriate rejections above.

CONTACT INFORMATION

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kent Chang whose telephone number is 571-272-7667. The examiner can normally be reached on Monday to Thursday from 9:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz, can be reached at 571-272-3638.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:


571-273-8300

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Hand-delivered responses should be brought to the Customer Service Window, now located at the Randolph Building, 401 Dulany Street, Alexandria, VA 22314.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Kent Chang
Primary Examiner
Art Unit 2629

kc
12/28/07